

RESPONSE

This is a response to the Office Action dated August 12, 2003. Claims 1-8 are pending in the application. Claims 1-8 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Pat. No. 4,721,083 ("Hosaka") in view of U.S. Pat. No. 6,561,336 ("Huart"). This objection is believed to be overcome in view of the amendments made to claims 1-8.

The rejections from the Office Action dated August 12, 2003 are discussed below in connection with the various claims. No new matter has been added. Reconsideration of the application is respectfully requested in light of the following remarks.

I. REJECTIONS UNDER 35 U.S.C. § 103(a)

A. Independent Claim 1

Independent claim 1 was rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Hosaka in view of Huart. Independent claim 1, as amended above, relates to a system for preventing stall of a vehicle engine. The claimed system includes an integrated starter alternator operably connected with an engine. The integrated starter alternator is capable of operating as a motor for transmitting torque to the engine or as an alternator for producing electric energy. The claimed system also includes a first electric energy storage device that is in electrical communication with the integrated starter alternator. In addition, the claimed system includes a second electric energy storage device that is in electrical communication with the integrated starter alternator and with the first electric energy storage device. The second electric energy storage device is operative to charge the first electric energy storage device. The claimed system also includes at least one controller in electrical communication with the integrated starter alternator and at least one sensor operably connected with the engine. The sensor sends a signal indicative of engine performance to at least one controller. The controller compares the signal to a predetermined condition indicative of engine stall and controls the first electric energy storage device and the integrated starter alternator to transmit a torque to the vehicle engine sufficient to prevent engine stall. These components of the claimed system are shown, for example, in Figure 1.

Neither Hosaka nor Huart discloses the element of a second electric energy storage device in electrical communication with the integrated starter alternator and the first electric energy storage device, where the second electric energy storage device is operative to charge the first electric energy storage device. Therefore, the combination of these two references fails to disclose this element.

Hosaka discloses an electronic control system for preventing engine stall in a standard combustion engine that uses a starter and an alternator. *See* Hosaka, Col. 1, lines 9-15; Col. 22, lines 37-45. Hosaka also discloses a standard battery that can power a conventional starter motor or alternator to supply additional torque to an engine for preventing engine stall. *See* Hosaka, Fig. 1B, element 259; Col. 22, lines 37-45. However, Hosaka does not teach or suggest a second battery or any other electric energy storage device that is operative to charge the standard battery. A second electric energy storage device charging the standard battery would be unnecessary in the internal combustion engine disclosed in Hosaka because the standard battery, disclosed therein, provides sufficient power to drive the starter or alternator for preventing engine stall.

Huart also fails to teach or suggest a second electric energy storage device that is operative to charge a first electric energy storage device. Instead, Huart discloses a friction-clutch device equipped with a rotational-drive flywheel. *See* Huart, Col. 1, lines 5-6. While Huart discloses that the friction-clutch device forms an alternator/starter, Huart does not disclose any structure for electrically powering the friction clutch-device to prevent engine stall. *See* Huart, Col. 2, lines 11-12.

Therefore, Applicants respectfully submit that there is nothing in Hosaka or Huart to suggest that it would be desirable to modify either reference to include a second electric energy storage device that is operative to charge a first electric energy storage device in a system for preventing stall of a vehicle engine. Claim 1 should be allowed because it is not obvious in view of the combination of Hosaka and Huart, as these references, alone or in combination, fail to disclose all of the elements of Applicants' claim.

Accordingly, Applicants request that the Examiner withdraw this rejection of independent claim 1.

B. Independent Claim 5

Independent claim 5 was also rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Hosaka in view of Huart. Independent claim 5, as amended above, relates to a method of preventing stall of a vehicle engine. The claimed method includes the steps of measuring at least one engine parameter relating to engine performance, detecting an engine condition known to lead to engine stall by comparing at least one engine parameter to a first predetermined value, measuring at least one charge parameter relating to engine bus voltage, providing a first electric energy storage device in electrical communication with a second electric energy storage device, charging a first electric energy storage device from a second electric energy storage device when the charge parameter relating to engine bus voltage is less than a second predetermined value, and powering an integrated starter alternator from the first electric energy storage device to apply additional torque to the engine when an engine stall condition is detected. These steps of the claimed method are shown, for example, in Figure 4.

As discussed above in Section II.A, Hosaka and Huart, either alone or in combination, fail to teach or suggest charging a first electric energy storage device from a second electric energy storage device as claimed in claim 5.

Therefore, claim 5 should be allowed because it is not obvious in view of the combination of Hosaka and Huart, as these references, alone or in combination, fail to disclose all of the elements of Applicants' claim.

Accordingly, Applicants request that the Examiner withdraw this rejection of independent claim 5.

C. Dependent Claims 2-4, 6-8

Dependent claims 2-4 and 6-8 were also rejected pursuant to 35 U.S.C. § 103(a) as being unpatentable over Hosaka in view of Huart. The dependent claims should be allowed for the reasons set out above for claims 1 and 5, the claims from which they depend. Applicants therefore request that the Examiner withdraw this rejection of these claims.

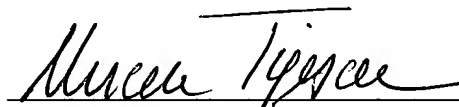
II. NEW CLAIMS

With this response, new claims 9-14 have been added. Support for these claims may be found in the specification. No new matter has been added. New claims 9-14 should be allowed over the cited references for the same reasons as discussed above. Accordingly, Applicants request that the Examiner allow new claims 9-14.

CONCLUSION

Each of the rejections in the Office Action dated August 12, 2003 has been addressed and no new matter has been added. Applicants submit that all of the pending claims are in condition for allowance and notice to this effect is respectfully requested. The Examiner is invited to call the undersigned if it would expedite the prosecution of this application.

Respectfully submitted,



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